IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An audio reproduction apparatus comprising:

- input means for inputting an input audio signal;
- an output for outputting an output audio signal derived from the input audio signal;
- a cost input for inputting a mathematical cost derived from a measurement, ~~which~~ said measurement ~~is~~ being user-influenceable; and
- a conditioning unit~~, capable of~~ for delivering the output audio signal in dependence of the mathematical cost,

characterized in that the conditioning unit comprises ~~an~~ audio processing means ~~arranged to process~~for processing the input audio signal to derive the output audio signal with a reproduction quality in dependence ~~of~~ on the mathematical cost, whereby a user is able to discern, by the reproduction quality, a deviation of the mathematical cost from a predetermined optimal mathematical cost.

2. (Currently Amended) ~~An~~ The audio reproduction apparatus as claimed in claim 1, wherein the reproduction quality comprises a three-dimensional position of a virtual sound source, the audio processing means being able to simulate the virtual sound source ~~by means of~~using the output audio signal, whereby as the mathematical cost deviates from the predetermined optimal mathematical cost, the

three-dimensional position of the virtual sound source deviates from a predetermined optimal position.

3. (Currently Amended) ~~An~~ The audio reproduction apparatus as claimed in claim 2, wherein the audio processing means comprises a filter ~~arranged to simulate~~for simulating the position of the virtual sound source by deriving the output audio signal by filtering the input audio signal with a user dependent head related transfer function.

4. (Currently Amended) ~~An~~ The audio reproduction apparatus as claimed in claim 2, wherein the audio processing means comprises an audio processing unit ~~arranged to simulate~~for simulating the position of the virtual sound source by changing a property of the output audio signal selected from signal amplitude and added reverberation.

5. (Currently Amended) ~~An~~ The audio reproduction apparatus as claimed in claim 1, wherein the audio processing means ~~is arranged to derive~~derives a second output audio signal, together with the output audio signal constituting a stereo audio signal, the audio processing means ~~being arranged to derive~~deriving the stereo audio signal from the input audio signal with a specified stereo quality dependent on the mathematical cost.

6. (Currently Amended) ~~An~~ The audio reproduction apparatus as claimed in claim 1, wherein the reproduction quality comprises a specification of a distribution of frequencies of the output audio signal.

7. (Currently Amended) ~~An~~ The audio reproduction apparatus as claimed in claim 1, ~~comprising~~ wherein said audio reproduction apparatus further comprises a first quality calculation unit for determining the reproduction quality for use in the subsequent derivation of the output audio signal by the audio processing means.

8. (Currently Amended) ~~An~~ The audio reproduction apparatus as claimed in claim 1, ~~comprising~~ wherein said audio reproduction apparatus further comprises:

_____quality measuring means for measuring an output quality measure of the output audio signal~~,~~ ; and ~~comprising~~

_____parameter value calculation means for calculating a parameter value, for use in the subsequent derivation of the output audio signal by the audio processing means.

9. (Currently Amended) ~~An~~ The audio reproduction apparatus as claimed in claim 1, wherein said audio reproduction apparatus further comprises a mathematical cost calculation unit ~~is comprised which is arranged to derive~~ for deriving the mathematical cost from the measurement receivable from a measurement device.

10. (Currently Amended) ~~An~~ The audio reproduction apparatus as claimed in claim 9, wherein the mathematical cost calculation unit ~~is arranged to derive~~derives the mathematical cost based on a difference between the measurement and a chosen value.

11. (Currently Amended) ~~An~~ The audio reproduction apparatus as claimed in claim 9, wherein the mathematical cost calculation unit ~~is arranged to derive~~derives the mathematical cost from a biometric measurement.

12. (Currently Amended) An audio feedback system comprising:

- an audio source;
- a measurement device ~~arranged to deliver~~for delivering a measurement which is user-influenceable;
- a mathematical cost calculation unit~~, arranged to derive~~ for deriving a mathematical cost from the measurement;
- a sound production device; and
- a conditioning unit ~~arranged to receive~~for receiving an input audio signal from the audio source, to receive the mathematical cost, and ~~to deliver~~for delivering to the sound production device an output audio signal derived from the input audio signal, in dependence ~~of~~ on the mathematical cost, characterized in that the conditioning unit comprises an audio processing means ~~arranged to process~~for processing the input audio signal to derive the output audio signal with a reproduction

quality in dependence ~~of~~ on the mathematical cost, whereby a user is able to discern, by the reproduction quality, a deviation of the mathematical cost from a predetermined optimal mathematical cost.

13. (Currently Amended) A method of deriving an output audio signal from an input audio signal in dependence ~~of~~ on a mathematical cost derived from a measurement which is user-influenceable, characterized in that the output signal is derived with a specified reproduction quality dependent on the mathematical cost, whereby a user is able to discern, by the reproduction quality, a deviation of the mathematical cost from a predetermined optimal mathematical cost.

14. (Cancelled).

15. (Currently Amended) A ~~data carrier~~computer-readable medium storing ~~the~~ a computer program ~~of claim 14~~enabling a processor to perform the method as claimed in claim 13.